

sion from those obtained by comparison with the other two stars, when I used Bessel's determination of the former, viz.,

|                    |                                        |                                        |
|--------------------|----------------------------------------|----------------------------------------|
| <sup>1852-0</sup>  | <sup>h</sup> <sup>m</sup> <sup>s</sup> | <sup>°</sup> <sup>'</sup> <sup>"</sup> |
| Weisse, xxiii, 229 | 23 11 17.70                            | 4 36 8.7                               |

“ This circumstance would have been puzzling had there been no other authority for the star ; but, fortunately, it occurs both in Lalande and Piazzi as follows :—

|                   |                                        |                                        |
|-------------------|----------------------------------------|----------------------------------------|
| <sup>1852-0</sup> | <sup>h</sup> <sup>m</sup> <sup>s</sup> | <sup>°</sup> <sup>'</sup> <sup>"</sup> |
| Lalande, 45638    | 23 11 16.57                            | 4 36 14.3                              |
| Piazzi, xxiii, 43 | 16.20                                  | 13.0                                   |

“ There can be little doubt, therefore, that the star has a secular proper motion in right ascension of upwards of two seconds. I assumed, in the comparison, that the places given by Mr. Stratford in his ephemeris are *apparent*. At the time of the observation on the 17th, there was an impression that whatever little condensation of light existed was not central, but north-east of the centre. I cannot say, however, that this was confirmed on the 20th. On the latter occasion there were small stars in the coma, and I feared there were others in the brighter parts ; the agreement of the observations leads me to hope such was not the case. Last night cleared up, but not early enough to see the comet.”

Mr. Graham got observations of Encke's Comet on the 23d and 24th inst., and states that the proximity of a ninth-magnitude star troubled him very much ; its light weakened that of the comet considerably. He adds that he never before had been so much impressed with the vapoury nature of such bodies, and that one could readily imagine that the comet of Encke could be compressed into the compass of a nutshell.

D'ARREST'S COMET,

With different Ring-Micrometers applied to the 5-foot Fraunhofer.

Bonn.

(Professor Argelander.)

| <sup>1851.</sup> | Bonn M. T.   |              |              | R. A.        |              |              | Decl.        |              |              |
|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                  | <sup>h</sup> | <sup>m</sup> | <sup>s</sup> | <sup>°</sup> | <sup>'</sup> | <sup>"</sup> | <sup>°</sup> | <sup>'</sup> | <sup>"</sup> |
| July 3           | 13           | 13           | 2.3          | 14           | 31           | 33.6         | + 10         | 47           | 3.0          |
| 5                | 13           | 37           | 41.9         | 16           | 42           | 41.2         |              | 49           | 3.1          |
| 6                | 13           | 21           | 9.8          | 17           | 46           | 6.6          |              | 49           | 20.0         |
| 22               | 12           | 26           | 54.0         | 33           | 43           | 35.7         | + 10         | 4            | 42.9         |
| 24               | 13           | 11           | 48.5         | 35           | 33           | 50.4         | + 9          | 53           | 7.5          |
| 25               | 12           | 50           | 52.8         | 36           | 26           | 20.2         |              | 47           | 1.4          |
| 27               | 13           | 5            | 36.6         | 38           | 11           | 3.8          |              | 33           | 36.2         |
| 28               | 12           | 46           | 56.2         | 39           | 1            | 27.5         | + 9          | 26           | 24.4         |
| Aug. 2           | 12           | 42           | 6.5          | 43           | 5            | 45.5         | + 8          | 46           | 50.4         |
| 5                | 12           | 55           | 41.5         | 45           | 23           | 35.5         |              | 20           | 7.2          |
|                  |              | 13           | 25 0.4       |              |              | 84.3         |              |              | 8.3          |
| 7                | 13           | 32           | 49.8         | 46           | 52           | 23.3         | + 8          | 1            | 12.2         |

|                  | Bonn M.T. |    |      | R.A. |    |      | Decl. |   |         |
|------------------|-----------|----|------|------|----|------|-------|---|---------|
|                  | h         | m  | s    | °    | '  | "    | °     | ' | "       |
| 1851.<br>Aug. 21 | 13        | 41 | 25.3 | 55   | 39 | 42.6 | +     | 5 | 29 5.0  |
| 22               | 13        | 14 | 40.7 | 56   | 10 | 28.2 | +     | 5 | 16 52.6 |
| 25               | 13        | 34 | 4.4  | 57   | 40 | 53.9 | +     | 4 | 39 33.5 |
| Sept. 2          | 13        | 29 | 41.8 | 61   | 4  | 36.0 | +     | 2 | 55 56.9 |
| 24               | 12        | 57 | 31.4 | 65   | 49 | 64.2 | —     | 2 | 8 56.7  |
|                  | 13        | 9  | 36.8 |      |    | 38.0 |       |   | 53.9    |
| 27               | 12        | 32 | 9.6  | 65   | 57 | 18.9 | —     | 2 | 49 58.0 |
|                  | 13        | 42 | 55.7 |      |    | 0.4  |       |   | 109.6   |
| Oct. 2           | 13        | 17 | 59.8 | 65   | 52 | 57.4 | —     | 3 | 57 9.7  |
| 3                | 14        | 6  | 14.8 | 65   | 49 | 52.4 | —     | 4 | 10 31.0 |
|                  | 14        | 37 | 43.3 |      |    | 44.5 |       |   | 28.8    |
| 4                | 13        | 45 | 1.1  | 65   | 45 | 38.4 | —     | 4 | 22 58.2 |

The following observations were made by M. Schmidt :—

|         |    |    |      |    |    |      |   |   |         |
|---------|----|----|------|----|----|------|---|---|---------|
| Sept. 7 | 13 | 38 | 30.2 | 62 | 45 | 30.1 | + | 1 | 47 18.0 |
| 8       | 15 | 52 | 25.4 | 63 | 4  | 29.1 | + | 1 | 32 41.2 |

*Solar Eclipse of January 31, 1851, observed at Paramatta by Captain P. King, R.N., with Notices of other Observations of the Eclipse in Australia.*

This eclipse was observed at Newlands, Paramatta, by Captain King, in conjunction with the Rev. W. B. Clarke, whose account is given in vol. xi. p. 223. The northern limit passed almost exactly over Captain King's station, but most probably the annulus was not formed. On February 1st, the Paramatta date of the eclipse, the sky became clear after a longish series of indifferent weather. The telescope used was a refractor by Watkins and Hill, of 2½ inches aperture and 44 inches focus, mounted equatorially, the eye-piece *direct* and magnifying about 40 times.

First contact, 4<sup>h</sup> 6<sup>m</sup> 6<sup>s</sup>, Local M.T., within 3<sup>s</sup> or 4<sup>s</sup>.

When the eclipse approached its maximum phase, "The sky and terrestrial objects around were enveloped in a gloom of dull greenish hue, the moon's disc formed a huge black orbicular mass, suspended within a crescent of dazzling splendour,\* while its lower edge seemed to be ploughing through a sea of fused metal. The cusps, which were attenuated to so acute an angle as to be scarcely definable, were so near each other and so rapidly approaching as

\* Diameter of sun 32' 29".8 } Probably *tabular* diameters.  
 — moon 29 40.5 }

Captain King states the smallest breadth of the uneclipsed portion of the sun to be 3' 6".7, but not whether this was *measured* or *computed*, probably the latter.